



**CBIZ Retirement Plan Services**

CBIZ Benefits Insurance Services, Inc.  
6050 Oak Tree Boulevard, Suite 500  
Cleveland, OH 44131  
Ph: 216.447.9000 • F: 216.447.9007  
<http://retirement.cbiz.com>

May 7, 2021

Jennifer Carlson  
Finance Director  
411 West 1st Street  
Room 107  
Duluth, MN 55802

**RE: Actuarial Valuation of Other Post-Employment Benefits under GASB Statements No. 74 and 75 as of January 1, 2021**

Dear Jennifer:

Enclosed are the results of the Actuarial Valuation of Other Post-Employment Benefits (OPEBs) under GASB Statements No. 74 and 75 for City of Duluth.

Overall, the Total OPEB Liability decreased relative to the expectation from the prior valuation. Below is a summary of the primary drivers of the decrease:

- Updated per-capita claims cost assumption and contribution rates

The JPE group changed third-party administrators and networks for pre-Medicare coverage from HealthPartners to Medica in 2021. This resulted in lower per-capita claims costs and premiums than expected, partially due to network savings and increased pharmacy rebates. However, the biggest source of the above gain was the *decrease* in the Medicare Advantage premiums for post-65 retirees.

Aside from the valuation results, the enclosed report also includes the estimated GASB No. 75 financial disclosures for fiscal years ending December 31, 2021, and 2022. These results must be reconciled with actual benefits paid at year-end.

Please review the results thoroughly. If you have any further questions or concerns, feel free to reach out to me by phone at 216.525.4683, or by e-mail at [AJJohnson@CBIZ.com](mailto:AJJohnson@CBIZ.com).

Respectfully,

A handwritten signature in blue ink that reads "Alex J. Johnson".

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Alex J. Johnson  
Actuarial Managing Consultant

Enclosure(s)



**Actuarial Valuation  
of  
Other Post Employment Benefits (OPEBs)  
as of January 1, 2021  
and  
GASB Statements No. 74 and 75**

**City of Duluth**

Report Prepared May 7, 2021

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# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Table of Contents

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		Page
<b>Section 1:</b>	Actuarial Certification	1
<b>Section 2:</b>	Summary of Valuation Results	2
	Development of Fiduciary Net Position at Valuation Date	3
	Development of the Actuarially Determined Contributions	4
	10-year Schedule of Funding Progress	5
	10-year Schedule of Employer Contributions	6
	Projected Retiree Benefit Payments	7
	<i>Estimated GASB Statements No. 74 and 75</i>	8
<b>Section 3:</b>	Participant Summary	12
	Plan Provisions	13
	Actuarial Methods and Assumptions	15
	Rationale for Key Assumptions	19
	Definitions	21



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Actuarial Certification

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I, the undersigned, am a consulting actuary associated with the firm CBIZ Retirement Plan Services. I am a member of the American Academy of Actuaries and meet its qualification standards to provide statements of actuarial opinion for actuarial valuations of Other Postemployment Benefits (OPEBs). I have completed an actuarial valuation of the OPEB Plan for the City of Duluth as of January 1, 2021. This report contains the results of the valuation.

To the best of my knowledge, the information supplied in this report is complete and accurate. In my opinion, the methods and assumptions used in the valuation comply with the Governmental Accounting Standards Board (GASB), particularly GASB Statements No. 74 and 75, "Accounting and Financial Reporting for Postemployment Benefits Other Than Pension". The assumptions are related reasonably to the past experience of the Plan, and they represent my best estimate of anticipated experience under the Plan. Nevertheless, the actual costs of the plan in the future will differ from the results of the valuation, as the emerging experience varies from the assumptions projected in the valuation.

I have relied on the City for the accuracy and completeness of the benefit plans, assets, claims and premium data, and the employee census. While I have not audited the data, I have reviewed it for reasonableness and consistency. A summary of my understanding of the plan features is provided in this report.

This report has been prepared for the use and benefit of the City in assessing the effect of GASB Statements No. 74 and 75 on accounting for OPEB plans. It should not be relied upon for other purposes, and it is not intended to benefit any other party. It may be shared in its entirety with all auditors and the general public.

Neither CBIZ nor any of the employees working on this engagement has any relationship with the City of Duluth that may impair, or appear to impair, the independence and objectivity of our work.

This actuarial valuation was prepared in accordance with the applicable Statements of the Governmental Accounting Standards Board and the Actuarial Standards of Practice issued by the American Academy of Actuaries.

Frank T. Vedegys, FSA, EA, MAAA  
Senior Consulting Actuary

May 7, 2021  
Date





## City of Duluth Actuarial Valuation as of January 1, 2021

### Summary of Valuation Results

Fund	Enterprise	General	Total
<b>Participant Data</b>			
Active Employees	184	649	833
Retirees and Covered Spouses	318	1313	1631
Total	502	1962	2464
<b>Present Value of Future Benefits (PVFB)</b>			
Active Employees	\$ 9,360,442	50,469,347	\$ 59,829,789
Retirees and Covered Spouses	16,147,059	82,309,334	98,456,393
Present Value of Future Benefits	\$ 25,507,501	132,778,681	\$ 158,286,182
<b>Total OPEB Liability (TOL)</b>			
Active Employees	\$ 7,895,882	42,577,037	\$ 50,472,919
Retirees and Covered Spouses	16,147,059	82,309,334	98,456,393
Total OPEB Liability	\$ 24,042,941	124,886,371	\$ 148,929,312
<b>Fiduciary Net Position (FNP)</b>	<u>(35,236,511)</u>	<u>(47,257,717)</u>	<u>(82,494,228)</u>
<b>Net OPEB Liability (NOL)</b>	<u>\$ (11,193,570)</u>	<u>77,628,654</u>	<u>\$ 66,435,084</u>
<b>FNP as a Percentage of TOL</b>	146.56%	37.84%	55.39%
<b>Actuarial Determined Contribution (ADC) for Year Ending:</b>			
December 31, 2021	\$ 1,723,432	8,220,584	\$ 9,944,016
December 31, 2022	1,646,095	8,548,486	10,194,581



## City of Duluth Actuarial Valuation as of January 1, 2021

### Development of Fiduciary Net Position at Valuation Date

#### Statement of Changes in Fiduciary Net Position

	1/1/2020 - 12/31/2020		
	OPEB Trust	Pay-as-you-go	Total
Balance as of Beginning of Year	\$ 71,510,666	\$ -	\$ 71,510,666
Employer Contributions	808,929	9,700,079	10,509,008
Participant Contributions	-	224,206	224,206
Implicit Subsidy	-	-	-
Investment Income, net of investment expenses	10,906,590	-	10,906,590
Total Additions	\$ 11,715,519	\$ 9,924,285	\$ 21,639,804
Net Benefit Payments, including implicit subsidy	(727,233)	(9,924,285)	(10,651,518)
Non-Investment Expenses	(4,724)	-	(4,724)
Total Deductions	\$ (731,957)	\$ (9,924,285)	\$ (10,656,242)
Net Change	\$ 10,983,562	\$ -	\$ 10,983,562
Balance as of End of Year	\$ 82,494,228	\$ -	\$ 82,494,228
Money-Weighted Rate of Return	15.24%	0.00%	15.24%





## City of Duluth Actuarial Valuation as of January 1, 2021

### Schedule of Funding Progress

Actuarial Valuation Date	Fiduciary Net Position (a)	Total OPEB Liability (b)	Net OPEB Liability (Asset) (b - a)	Funded Ratio (a / b)	Annual Covered Payroll (c)	Net OPEB Liability as a Percent of Payroll (b - a) / c
1/1/2005	\$ -	\$ 279,934,736	\$ 279,934,736	0.0%	N/A	0.0%
6/1/2007	13,700,000	267,381,748	253,681,748	5.1%	\$ 44,748,212	566.9%
6/1/2009	16,740,064	224,338,111	207,598,047	7.5%	51,536,853	402.8%
6/1/2011	27,753,929	219,748,555	191,994,626	12.6%	39,716,268	483.4%
1/1/2013	31,743,134	214,255,582	182,512,448	14.8%	35,546,938	513.4%
1/1/2015	43,257,834	172,507,535	129,249,701	25.1%	30,154,437	428.6%
1/1/2017	48,829,195	170,000,969	121,171,774	28.7%	51,597,031	234.8%
1/1/2019	56,404,693	161,317,062	104,912,369	35.0%	54,243,818	193.4%
1/1/2021	82,494,228	148,929,312	66,435,084	55.4%	56,855,329	116.8%

Through the 1/1/2015 valuation date, only payroll for participants hired prior to the "grandfather" dates was included.



## City of Duluth Actuarial Valuation as of January 1, 2021

### 10-Year Schedule of Employer Contributions

Fiscal Year Ended December 31,	Actuarially Determined Contribution (a)	Historical Contribution (b)	Contribution Deficiency (Excess) (a) - (b)	Covered Payroll (c)	Contributions as a Percentage of Covered Payroll (b) / (c)
12/31/2013	\$ 14,249,437	\$ 8,772,788	\$ 5,476,649	\$ 35,546,938	24.68%
12/31/2014	14,249,437	9,277,052	4,972,385	35,546,938	26.10%
12/31/2015	10,095,898	10,602,498	(506,600)	30,154,437	35.16%
12/31/2016	10,095,898	9,770,624	325,274	30,154,437	32.40%
12/31/2017	11,456,261	10,222,267	1,233,994	51,597,031	19.81%
12/31/2018	10,536,980	11,678,484	(1,141,504)	51,597,031	22.63%
12/31/2019	10,769,326	11,642,994	(873,668)	54,243,818	21.46%
12/31/2020	10,427,312	10,509,008	(81,696)	<i>56,142,352</i>	18.72%

Beginning Fiscal Year Ending 2018, the ADC is calculated in accordance with the Employer's substantive 'pay-as-you-go' funding policy. Prior to Fiscal Year Ending 2018, the ADC is equal to the Annual Required Contribution (ARC) as calculated under GASB No. 45.

*Italicized amounts are yet to be determined*

Historical payroll reflects that disclosed as of the most recent actuarial valuation date. Through years ending 12/31/2016, only payroll for participants hired prior to the "grandfather" dates was included.



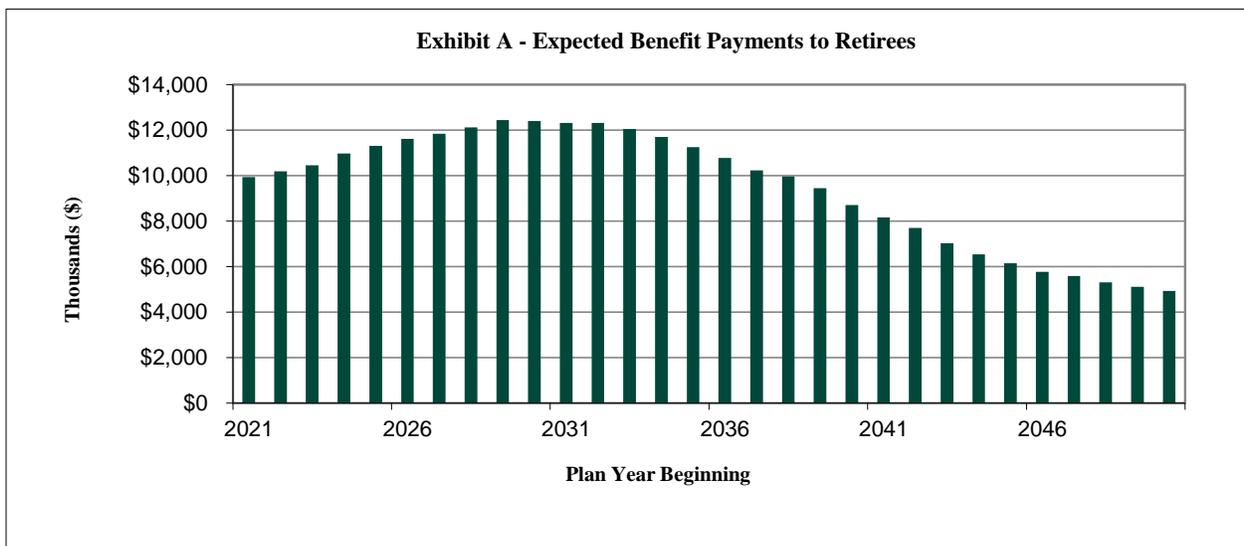
# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Projected Retiree Benefit Payments

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Exhibit A is a graph that shows the 30-year projection of expected benefit payments under the OPEB plan. These payments only reflect those participants who have already been hired or who are retired. Expected benefit payments are equal to the number of retirees each year times the per retiree cost to the employer. The first year's projected benefit payments total \$9,944,016. As the last participants retire and then reach the end of their benefit period, the benefit payments decline and eventually would reach zero. Exhibit B is a table showing the first 10 years of expected benefit payments.



### Exhibit B: First 10 Years of Expected Benefit Payments

Plan Year Beginning January 1,	Total Projected Benefits
2021	\$ 9,944,016
2022	10,194,581
2023	10,449,392
2024	10,972,886
2025	11,301,205
2026	11,614,932
2027	11,837,411
2028	12,120,722
2029	12,433,508
2030	12,397,193



## City of Duluth GASB Statements No. 74 and 75

### OPEB Expense (Income)

	Fiscal Year Ending	
	12/31/2022	12/31/2021
<b>OPEB Expense (Income)</b>	<i>Estimate</i>	<i>Estimate</i>
1. Service Cost	\$ 1,969,250	\$ 1,902,658
2. Interest Cost	8,267,000	8,259,793
3. Non-Investment Administrative Expenses	8,719	8,249
4. Employee Contributions	0	0
5. Projected Earnings on Fiduciary Net Position	(4,969,463)	(4,701,936)
6. Recognition of Deferred Outflows/(Inflows) related to:		
Net difference between projected and actual earnings	(2,538,704)	(2,538,699)
Differences between expected and actual experience	867,427	867,427
Changes in assumptions	(6,749,295)	(6,749,295)
7. Ad Hoc Postemployment Benefit Changes	0	0
8. OPEB Expense (Income)	\$ (3,145,066)	\$ (2,951,803)

<b>Development of Interest Cost on:</b>	<b>% of Period</b>			
1. Beginning Total OPEB Liability	100%	\$ 8,501,422	\$ 8,488,971	
2. Service Cost	50%	56,124	54,226	
3. Benefit Payments	50%	(290,546)	(283,404)	
4. Total Interest Cost on Total OPEB Liability		\$ 8,267,000	\$ 8,259,793	

<b>Development of Projected Earnings on:</b>	<b>% of Period</b>			
1. Beginning Fiduciary Net Position	100%	\$ 4,969,711	\$ 4,702,171	
2. Employer Contributions	50%	290,546	283,404	
3. Employee Contributions	50%	0	0	
4. Benefit Payments	50%	(290,546)	(283,404)	
5. Non-Investment Administrative Expenses	50%	(248)	(235)	
6. Total Projected Earnings on Fiduciary Net Position		\$ 4,969,463	\$ 4,701,936	

### Key Assumptions for OPEB Expense (Income)

Discount Rate	5.70%	5.70%
Salary Scale	3.50%	3.50%
Expected Return on Assets	5.70%	5.70%



## City of Duluth GASB Statements No. 74 and 75

### Net OPEB Liability

	Fiscal Year Ending	
	12/31/2022	12/31/2021
<b>Reconciliation of Total OPEB Liability</b>	<i>Estimate</i>	<i>Estimate</i>
1. Total OPEB Liability at End of Prior Year	\$ 149,147,747	\$ 156,608,958
2. Service Cost	1,969,250	1,902,658
3. Interest Cost	8,267,000	8,259,793
4. Net Benefits Paid by Employer	(10,194,581)	(9,944,016)
5. Ad Hoc Postemployment Benefit Changes	0	0
6. Differences between expected and actual experience	0	2,504,780
7. Changes in assumptions	0	(10,184,426)
8. Total OPEB Liability at End of Year	\$ 149,189,416	\$ 149,147,747
<b>Reconciliation of Fiduciary Net Position</b>		
1. Fiduciary Net Position at End of Prior Year	\$ 87,187,915	\$ 82,494,228
2. Projected Earnings on Fiduciary Net Position	4,969,463	4,701,936
3. Difference Between Projected and Actual Earnings	0	0
4. Employer Contributions	10,194,581	9,944,016
5. Net Benefits Paid by Employer	(10,194,581)	(9,944,016)
6. Expenses	(8,719)	(8,249)
7. Employee Contributions	0	0
8. Fiduciary Net Position at End of Year	\$ 92,148,659	\$ 87,187,915
Money-Weighted Rate of Return	5.70%	5.70%
<b>Net OPEB Liability (Asset)</b>		
1. Total OPEB Liability	\$ 149,189,416	\$ 149,147,747
2. Fiduciary Net Position	(92,148,659)	(87,187,915)
3. Net OPEB Liability (Asset)	\$ 57,040,757	\$ 61,959,832
Fiduciary Net Position as % of Total OPEB Liability	61.77%	58.46%
Net OPEB Liability: 1% increase in the discount rate	\$ 44,262,561	\$ 48,993,262
Net OPEB Liability: 1% decrease in the discount rate	72,106,681	77,259,833
Net OPEB Liability: 1% increase in healthcare trend	75,459,146	79,129,865
Net OPEB Liability: 1% decrease in healthcare trend	41,419,451	47,390,986
<b>Key Assumptions for Net OPEB Liability</b>		
Discount Rate	5.70%	5.70%
Salary Scale	3.50%	3.50%
Expected Return on Assets	5.70%	5.70%



## City of Duluth GASB Statements No. 74 and 75

### Deferred Outflows (Inflows)

	Fiscal Year Ending	
	12/31/2022	12/31/2021
<b>Deferred Inflows of Resources Related to OPEB</b>	<i>Estimate</i>	<i>Estimate</i>
1. Net difference between projected and actual earnings	\$ 4,931,007	\$ 7,469,711
2. Differences between expected and actual experience	0	0
3. Changes in assumptions	7,733,959	14,483,254
4. Total	\$ 12,664,966	\$ 21,952,965
<b>Deferred Outflows of Resources Related to OPEB</b>		
1. Net difference between projected and actual earnings	\$ 0	\$ 0
2. Differences between expected and actual experience	1,537,551	2,404,978
3. Changes in assumptions	0	0
4. Contributions subsequent to measurement date	0	0
5. Total	\$ 1,537,551	\$ 2,404,978

### Schedule of Deferred Outflows (Inflows)

Amounts reported as deferred outflows or deferred inflows of resources related to OPEBs will be recognized in OPEB expense as follows:

FYE 12/31/2022		FYE 12/31/2021	
2023	\$ (7,190,525)	2022	\$ (8,420,572)
2024	(3,068,460)	2023	(7,190,525)
2025	(868,430)	2024	(3,068,460)
2026	-	2025	(868,430)
2027	-	2026	-
2028+	-	2027+	-



## City of Duluth GASB Statements No. 74 and 75

### Deferred Outflows (Inflows) (cont.)

#### Deferred Outflows/(Inflows) - Historical Amortization Schedules

Fiscal Year Established	Original Amount	Original Amortization Amount	Original Amortization Period	Outstanding Balance at 12/31/2022	Outstanding Balance at 12/31/2021
<u>Net difference between projected and actual earnings</u>					
2022	\$ 0	\$ 0	5.00	\$ 0	\$ N/A
2021	0	0	5.00	0	0
2020	(6,828,289)	(1,365,658)	5.00	(2,731,314)	(4,096,972)
2019	(10,998,469)	(2,199,694)	5.00	(2,199,693)	(4,399,387)
2018	5,133,260	1,026,653	5.00	0	1,026,648
<u>Differences between expected and actual experience</u>					
2022	\$ 0	\$ 0	4.51	\$ 0	\$ N/A
2021	2,504,780	555,384	4.51	1,394,012	1,949,396
2020	0	0	4.46	0	0
2019	1,391,711	312,043	4.46	143,539	455,582
<u>Changes in assumptions</u>					
2022	\$ 0	\$ 0	4.51	\$ 0	\$ N/A
2021	(10,184,426)	(2,258,188)	4.51	(5,668,050)	(7,926,238)
2020	0	0	4.46	0	0
2019	(20,030,337)	(4,491,107)	4.46	(2,065,909)	(6,557,016)



## City of Duluth Actuarial Valuation as of January 1, 2021

### Participant Summary

#### Participant Summary

Metric	Active Employees	Retirees and Spouses
Covered Participants	833	1631
Average Age	44.2	70.4
Average Service	10.6	N/A
Percentage Male	71.4	47.8

#### Age and Service Chart

Attained Age	Years of Credited Service										Total
	<1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	
Under 25	3	13	0	0	0	0	0	0	0	0	16
25 to 29	11	38	13	0	0	0	0	0	0	0	62
30 to 34	8	53	49	3	0	0	0	0	0	0	113
35 to 39	8	40	44	26	1	0	0	0	0	0	119
40 to 44	10	22	35	40	11	8	0	0	0	0	126
45 to 49	4	12	23	24	14	40	0	0	0	0	117
50 to 54	3	14	18	14	16	45	19	4	0	0	133
55 to 59	2	12	17	25	7	19	8	2	1	0	93
60 to 64	1	7	8	11	8	3	3	1	0	1	43
65 to 70	0	2	1	2	1	0	2	0	0	0	8
70+	0	2	0	0	0	0	0	0	0	1	3
<b>Total</b>	<b>50</b>	<b>215</b>	<b>208</b>	<b>145</b>	<b>58</b>	<b>115</b>	<b>32</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>833</b>



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Plan Provisions

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#### Retiree Benefits

1. Continuation of medical, pharmacy, and dental benefits under the City's group plan. Pre-Medicare retirees are enrolled in the same self-insured plan as active employees. Medicare eligible employees are enrolled in a fully-ensured Medicare Supplemental plan sponsored by the City.
2. Life Insurance: \$25,000 life insurance for all eligible retirees.
3. Long-Term Disability: eligible to continue receiving health benefits and \$50,000 life insurance.
4. Retirees pay 100% of dental benefit costs, resulting in no liability for the City.

#### Eligibility

*Police and Firefighters:*

Any age with 5+ years of service if hired before 1/1/2007  
 Age 50 with 5+ years of service if hired after 12/31/2006

*All Others:*

Age 55 with 5+ years of service. Supervisors may be eligible if involuntarily terminated.

#### Dependent Coverage

Spouses and Surviving Spouses and children up to age 26 are eligible for healthcare benefits.

#### Length of Benefits

*Retiree* : Life  
*Spouse* : Life, or until remarriage

#### Annual Premium Equivalent Rates

Plan	Single Coverage	Family Coverage
Medica (pre-65)	\$11,760	\$28,920
Freedom/National (post-65)	3,240	6,480
Life Insurance	\$0.27 per \$1,000 of coverage.	

#### Retiree Contributions

*City Police and Fire:*

Hired after 12/31/2006: 100% of Premium Equivalent Rates  
 Hired before 1/1/2007: Percentage of Premium Equivalent Rates according to length of service, as shown below

*City Supervisory, LELS, and Confidential*

Hired after 12/31/2005: 100% of Premium Equivalent Rates  
 Hired before 1/1/2006: Percentage of Premium Equivalent Rates according to length of service, as shown below



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Plan Provisions

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**Retiree**

*All Other City Employees:*

**Contributions (cont.)**

Hired after 12/31/2006: 100% of Premium Equivalent Rates  
 Hired before 1/1/2007 with 15 years of service, and retired before 12/15/2009: City pays full premium.

Hired before 1/1/2007: Percentage of Premium Equivalent Rates according to length of service, as shown below

Years of Service	Retiree Percentage of Premium	Years of Service	Retiree Percentage of Premium
5	75%	13	35%
6	70	14	30
7	65	15	25
8	60	16	20
9	55	17	15
10	50	18	10
11	45	19	5
12	40	20	0

Retirees contribute nothing for life insurance coverage.

**Changes Since Prior Valuation**

1. Premium equivalent rates were updated to reflect current rates.
2. Pre-Medicare coverage was moved from HealthPartners to Medica. Benefits largely remained the same with updated network and pharmacy rebates.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Actuarial Methods and Assumptions

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<b>Actuarial Valuation Date</b>	January 1, 2021
<b>Actuarial Cost Method</b>	Individual Entry Age Normal as a level percentage of payroll
<b>Discount Rate</b>	5.70% at valuation date
<b>Annual Wage Increases</b>	3.50%
<b>Price Inflation</b>	2.20%
<b>Investment Rate of Return</b>	5.70%
<b>Actuarial Value of Assets</b>	Market Value
<b>Healthcare Reform</b>	<p>The excise tax on high-cost healthcare plans (“Cadillac” tax) scheduled to take effect in 2022 has been repealed. As a result the liability for future excise taxes is zero.</p> <p>Other legislative changes related to the Affordable Care Act were included in the valuation only to the extent they have already been implemented in the plan.</p>

**Annual Healthcare Trend**

Years after Valuation	Medical & Pharmacy	
	Pre-65	Post-65
1	8.00%	3.75%
2	7.50	3.75
3	7.00	3.75
4	6.50	3.75
5	6.00	3.75
6	5.50	3.75
7+	5.00	3.75



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Actuarial Methods and Assumptions

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#### Annual Per-Capita Healthcare Costs

Age	Med/Rx Claims Cost	Fixed Cost
40	\$ 8,317	\$ 405
45	9,525	405
50	10,909	405
55	12,494	405
60	14,309	405
64	15,949	405
65	2,965	-
70	3,116	-
75	3,275	-
80	3,442	-
85+	3,618	-

Age	Morbidity Rate
< 65	2.75%
65 - 85	1.00%
86+	0.00%

Starting pre-Medicare per-capita costs were developed using paid claims and enrollment data from January 1, 2019 through December 31, 2020. For pre-Medicare ages, active and retiree plan experience was used. Medical and Pharmacy experience were analyzed separately, and projected to the current claims year at 7.7% and 7.3%, respectively, based on the 2021 Segal Health Plan Cost Trend Survey. 40% of the resulting per-capita costs were blended with 60% of the expected costs based on our credibility analysis to reduce volatility. Consideration was also given to abnormal utilization patterns generated by the COVID-19 pandemic. The resulting costs were then disaggregated into age-specific starting rates using average ages and the morbidity assumptions above to reflect the relationship between costs and increasing age. Fixed costs and fees are shown separately, and include administrative fees as well as specific and aggregate stop-loss premiums.

Starting Medicare-eligible per-capita costs were developed using the fully-insured premium rates as provided by the insurer. The rates were then disaggregated into age-specific starting costs using average ages and the morbidity assumptions above to reflect the relationship between costs and increasing age. Fixed costs and fees are included in these costs to the extent the insurer incorporated them.

#### Participation

##### *Future Retirees:*

100% of employees who receive a City contribution are assumed to elect medical benefits once they are eligible for retirement.

25% of employees who pay the full premium are assumed to elect medical benefits once they are eligible for retirement.

*Current Retirees:* Based on current coverage election. It is assumed that no one will opt in or opt out of coverage once initial retirement election is made.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Actuarial Methods and Assumptions

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**Spousal Participation**

*Future Retirees:* 65% of participating retirees are assumed to be married at retirement and will cover their spouse.

*Current Retirees:* Based on current coverage election.

**Spouse Age**

Male spouses are assumed to be 3 years older, and female spouses are assumed to be 3 years younger. Actual age is used for spouses of current retirees, if provided.

**Mortality**

*Healthy Employee*

*Police/Fire:* Pub-2010 Safety Employees Headcount-Weighted Mortality

*Others:* Pub-2010 General Employees Headcount-Weighted Mortality

*Healthy Retiree and Covered Spouse*

*Police/Fire:* Pub-2010 Safety Retirees Headcount-Weighted Mortality

*Others:* Pub-2010 General Retirees Headcount-Weighted Mortality

*Survivors and Beneficiaries*

*Police/Fire:* Pub-2010 Contingent Survivors Headcount-Weighted Mortality

*Others:* Pub-2010 General Contingent Survivors Headcount Weighted Mortality

Margin for mortality improvements: Scale MP-2020, projected fully generationally

**Withdrawal**

Participants are assumed to terminate employment for reasons other than death, disability or retirement in accordance with annual rates varying by age. The following table illustrates at sample of the assumed rates of such terminations per year:

Sample Age	Police & Fire	Others - Male	Others - Female
20	8.6%	8.4%	8.4%
30	2.8	5.4	5.4
40	1.3	3.0	3.5
50	0.5	2.0	2.5
60	0.0	0.0	0.0



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Actuarial Methods and Assumptions

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#### Disability

Participants are assumed to become disabled in accordance with annual rates varying by age. The following table illustrates a sample of the assumed rates of such disablements per year:

Sample Age	Rate
20	0.03%
30	0.03
40	0.04
50	0.21
60	1.01

#### Retirement

Participants are assumed to retire in accordance with annual rates varying by age. The following table illustrates the assumed rates of retirement per year:

Age	Police & Fire	Others - Rule of 90	Others - Not Rule of 90
<50	Withdrawal	0%	0%
50-51	20%	0	0
52	30	0	0
53-54	35	0	0
55-59	40	67	10
60	75	67	25
61	75	67	40
62-64	80	67	40
65	100	50	50
66-69	100	40	40
70	100	60	60
71	100	100	100

#### Changes Since Prior Valuation

1. Per-capita costs were updated to reflect experience since the previous valuation as well as the change in TPA from HealthPartners to Medica.
2. Base mortality rates were updated from the RPH-2014 Total Dataset Headcount-Weighted tables to the new PUB-2010 Headcount-Weighted Tables. "Safety" tables were used for Police & Fire participants, and "General" tables for all others.
3. Mortality Improvement Scale was updated from MP-2018 to MP-2020.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Rationale for Key Assumptions

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#### Investment Rate of Return

The investment policy of the Employer is determined based on the goals and objectives of the Plan and the risk tolerance of the Employer. As new information regarding the economic environment becomes available the investment policy may need to be revised. Asset allocations fluctuate due to market performance, however, the targeted OPEB asset allocation is as described below. The Employer's objective in selecting the Expected Long-Term rate of return on Assets is to estimate the single rate of return that reflects the historical returns, future expectations for each asset class, and the asset mix of the plan assets.

Asset Classes	Target Allocation	Expected Real Rate of Return
Domestic Fixed Income	30%	0.80%
Domestic Equity	70%	4.70%
Other	0%	0.00%
Expected Real Rate of Return		3.50%
Inflation Rate	+	2.20%
<b>Total Investment Rate of Return</b>		<b>5.70%</b>

#### Discount Rate

The discount rate is the single rate that reflects (1) the long-term expected rate of return on OPEB plan investments that are expected to be used to finance the payment of benefits, to the extent that the OPEB plan's fiduciary net position is projected to be sufficient to make projected benefit payments and OPEB plan assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another scale), to the extent that the conditions for use of the long-term expected rate of return are not met.

For purposes of calculating the discount rate, it is assumed that all future Employer contributions will be equal to the projected net retiree benefit payments, consistent with the Employer's substantive historical 'pay-as-you-go' funding policy.

#### Single Equivalent Interest Rate (SEIR)

Long-Term Expected Rate of Return	5.70%
Municipal Bond Index Rate*	1.93%
Administrative Expenses Paid from the Trust	0.01%
Fiscal Year in which Fiduciary Net Position is Projected to be Depleted	N/A
Single Equivalent Interest Rate	5.70%

\* Source: S&P Municipal Bond 20 Year High Grade Rate Index



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### **Rationale for Key Assumptions**

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#### Annual Healthcare Trend

Trend rates are based on plan experience, historical trends, and industry norms. The immediate trend rates are assumed to decrease to an ultimate trend rate over a period of 5 to 10 years. Healthcare costs are currently approximately 17.7% of the Gross Domestic Product (GDP), according to the Center for Medicare & Medicaid Services. The ultimate rate is decreased over time to maintain this relationship.

#### Withdrawal, Disability, Retirement

The current assumption has been selected based on the actuary's experience with plans of a similar size, plan design, workforce composition, and discussions with the Employer.

#### Mortality

The mortality assumption is the most recent "Pub-2010" headcount-weighted table from the Society of Actuaries with any workforce adjustments selected based on the actuary's experience with plans of a similar size, plan design, workforce composition, and discussions with the Employer. The most recent fully-generational "MP" improvement scale is used to reflect future mortality improvements.

#### Participation

The assumed rate of participation incorporated into these measurements is based on an experience analysis of the plan's past experience, the actuary's experience with plans of a similar size, plan design and retiree contribution level.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Definitions

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Actuarial Present Value of Projected Benefits	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation Date	The date as of which the service cost, total OPEB liability, and related actuarial present value of projected benefit payments is determined in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarially Determined Contribution (ADC)	A target or recommended contribution to a defined benefit plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Closed Period	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
Contributions	Additions to a OPEB plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government plan), or employees. Contributions can result from cash receipts by the OPEB plan or from recognition by the OPEB plan of a receivable from one of these sources.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Covered Employee Payroll	The payroll of employees that are provided with OPEBs through the OPEB plan.
Deferred Outflows and Inflows of Resources Related to OPEBs	Deferred outflows of resources and deferred inflows of resources related to OPEBs arising from certain changes in the net OPEB liability.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Definitions

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Defined Benefit OPEB	OPEB for which the benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The OPEB may be stated as (a) a specified dollar amount; (b) an amount that is calculated based on one or more factors such as age, years of service, and compensation; or (c) a type or level of coverage such as prescription drug coverage or a percentage of health insurance premiums.
Defined Contribution OPEB	OPEB having terms that (a) provide an individual account for each employee; (b) define the contributions that an employer or nonemployer contributing entity is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (c) provide that the OPEB an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earning on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as OPEB plan administrative costs, that are allocated to the employee's account.
Discount Rate	<p>The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:</p> <ol style="list-style-type: none"><li>1. The actuarial present value of benefit payments projected to be made in future periods in which (1) the amount of the OPEB plan's fiduciary net position is projected (under the requirements of Statement 75) to be greater than the benefit payments that are projected to be made in that period and (2) OPEB plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on OPEB plan investments.</li><li>2. The actuarial present value of projected benefit payments not included in (a), calculated using a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale).</li></ol>



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Definitions

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Entry Age Actuarial Cost Method	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the <i>actuarial accrued liability</i> .
Healthcare Cost Trend Rates	The rates of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
Money-Weighted Rate of Return	A method of calculating period-by-period returns on OPEB plan investments that adjusts for the changing amounts actually invested. For purposes of Statement 74, money-weighted rate of return is calculated as the internal rate of return on OPEB plan investments, net of OPEB plan investment expense.
Net OPEB Liability	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit OPEB plan.
OPEB Expense	OPEB expense arising from certain changes in the net OPEB liability.
Other Postemployment Benefits (OPEB)	Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
Postemployment Healthcare Benefits	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.



# City of Duluth

## Actuarial Valuation as of January 1, 2021

### Definitions

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Projected Benefit Payments	All benefits (including refunds of employee contributions) estimated to be payable through the OPEB plan (including amounts to be paid by employers or nonemployer contributing entities as the benefits come due) to current active and inactive employees as a result of their past service and their expected future service.
Real Rate of Return	The rate of return on an investment after adjustment to eliminate inflation.
Service Costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Termination Benefits	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total OPEB Liability	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 75. The total OPEB liability is the liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit OPEB plan that is not administered through a trust that meets the criteria of paragraph 4 of Statement 75.